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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,203	04/02/2004	Keith R. Slavin	7733 US	2197
7590	11/10/2004		EXAMINER	
Francis I. Gray TEKTRONIX, INC. 50-LAW P.O. Box 500 Beaverton, OR 97077			JEANGLAUME, JEAN BRUNER	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/817,203	SLAVIN, KEITH R.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jean B Jeanglaude	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 02 April 2004.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 4-02-04 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1 and 2 is/are rejected.

7) Claim(s) 3-7 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 02 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4-02-04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### Claim Objection

1. Claim 4 is objected to because of the following informalities: it is suggested to substitute "an" before the word "providing" in claim 4, line 6 by – a --. Appropriate correction is required.

### Drawings

2. Submitted drawings were used for examining purpose only. Formal drawings are required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adrian et al. (US patent number 5,617,058) in view of Goldstein et al. (US application No. 10/121,348).

5. Regarding claims 1, 2, Adrian et al. discloses a linearity compensation circuit for a non-linear system that introduces harmonic distortion into an input signal (abstract; figs. 10, 11) in which a correction mechanism (64, fig. 11) is used to correct harmonic distortion (abstract). Adrian et al. does not specifically disclose the linearity compensation circuit that generates from the input signal a plurality of separate corrected harmonic components using Hilbert Transformer filters; and means for

summing the plurality of separate corrected harmonic components with a delayed version of the input signal to provide a corrected input signal with harmonic cancellation of the harmonic distortion. However, Goldstein et al., in the same field of endeavor, discloses a system (fig. 6) that comprises a plurality of harmonic components (175a, 175c, fig. 6) and a summer (177, fig. 6) where the harmonic signals are added and produces an output signal (fig. 6). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Goldstein et al.'s system in Adrian et al.'s system in order to compensate for interfering tones mixed with a signal received by a voice band modem and one skilled in the art, once coupled the correction mechanism disclosed in Adrian et al.'s system in Goldstein et al., would achieve the same end result as the claimed invention - linearity compensation by canceling harmonics generated in signal processing system such as ADCs.

#### Allowable Subject Matter

6. Claims 3 – 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Reasons for allowing the aforementioned claims will be provided in the next office action.

#### Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Lim deceased et al. (US patent Number 4,615,038) discloses an equalization of modulated data signals utilizing tentative and final decisions and replication of non-linear channel distortion.
10. Orban (US patent Number 5,168,526) discloses a distortion cancellation circuit for audio peak limiting.
11. Craven et al. (US patent Number 5,627,899) discloses compensating filters.
12. Velazquez et al. (US patent Number 6,388,594) discloses a method of calibrating ADCs.
13. Croft, III et al. (US patent Number 6,584,205) discloses a modulator processing for a parametric speaker system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Jeanglaude whose telephone number is 571-272-1804. The examiner can normally be reached on Monday - Friday 7:30 A. M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Jean Bruner Jeanglaude*

Jean Bruner Jeanglaude  
Primary Examiner  
November 4, 2004